Scope of Claims

[1] An optical film having a transparent base and a coating layer which is provided on at least one side of the transparent base, said coating layer having transparent fine particles of 0.5 to 10 μm in average particle size dispersed in a transparent resin phase; the optical film characterized in that one of said transparent resin phase or transparent fine particle contains a molecule-oriented high-molecular liquid crystal compound and the other is made of an optical isotropic resin.

[2] An optical film according to Claim 1, characterized in that the coating layer has an irregular surface whose average roughness (Ra) is 0.1 to 1.0 μm.

[3] An optical film according to Claim 1, characterized in that the transparent fine particles are spherical particles.

[4] An optical film according to Claim 1, characterized in that the coating layer is provided directly on the transparent base.

[5] An optical film according to Claim 1, having a transparent base and a coating layer which is provided on at least one side of the transparent base and where transparent fine particles of 0.5 to 10 μm in average particle size made of an optical isotropic resin are dispersed in an optical anisotropic polymer phase made of a molecule-oriented high-molecular liquid crystal compound, the optical film characterized in that the direct transmittance of light with a wavelength of 550 nm entering the film surface at an angle of incidence of 30° is higher than the direct transmittance of light entering the film at an angle of incidence of 0°.

[6] An optical film according to Claim 1, characterized by having a transparent base and a coating layer which is provided on at least one side of the transparent base and where optical anisotropic fine polymer particles of 0.5 to 10 μm in average particle size made of a high-molecular liquid crystal compound whose molecules have been oriented via application of heat or light or both are dispersed as transparent fine particles in an optical isotropic resin.

[7] A method of producing the optical film of Claim 5, characterized by comprising a step of preparing a coating material by dissolving and dispersing in a solvent a high-molecular liquid crystal compound and transparent fine particles of 0.5 to 10 μm in average particle

size made of an optical isotropic resin; a step of applying said coating material on a transparent base and volatilizing the solvent to form a coating layer where transparent fine particles are dispersed in a high-molecular liquid crystal compound phase; and a step of applying light or heat or both to orient the molecules of high-molecular liquid crystal compound.

[8] A method of producing the optical film of Claim 6, characterized by comprising a step of preparing a coating material by dissolving and dispersing in a solvent an optical isotropic resin and transparent fine particles of 0.5 to 10 μm in average particle size made of a high-molecular liquid crystal compound; a step of applying said coating material on a transparent base and volatilizing the solvent to form a coating layer where transparent fine particles made of high-molecular liquid crystal compound are dispersed in an optical isotropic resin phase; and a step of applying light or heat or both to orient the molecules of high-molecular liquid crystal compound.

[9] Polymer liquid crystal fine particles to be used in the optical film of Claim 6, characterized by being transparent fine particles of 0.5 to 10 μm in average particle size which are made of a high-molecular liquid crystal compound containing liquid crystal mesogens and whose molecules have been oriented via application of heat or light or both.

[10] Polymer liquid crystal fine particles according to Claim 9, characterized in that the fine particles have a spherical shape.